

**Abstract of The Invention**

The invention is directed to a dispersion compensation module of extremely simple design that does not rely on a spool-and-hub or similar device for holding the optical fiber used in the module, such module being here termed a "Free-Fiber dispersion compensation module". In the inventive dispersion compensation module the optical fiber therein is in a relaxed coiled configuration having minimal tension. It has also been discovered that while coil tension is relieved by removing it from the winding spool prior to placing it in the dispersion compensation module, the tension can be further relieved by coating the coiled fiber with a finely powdered substance which will not react with or otherwise harm or damage wither the fiber or the module containing it. For example, talcum powder.